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biology of aquatic plants, by Professor Wylie; (3) the nature of plants, by Professor Wylie. Opportunities are afforded, also, for research work in botany under the direction of the two professors named. In the second term, work is offered in field ecology and plant taxonomy by Professor Shimek. Courses in geology, zoology and nature study also are offered by competent instructors. The management of this summer-school work is in charge of the director of university extension at Iowa City.

CHARLES E. BESSEY

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SPECIAL ARTICLES

SEX AND ITS RELATION TO THE BARRING FACTOR IN POULTRY

W. J. SPILLMAN¹ has suggested that the barring factor and sex in poultry are correlated in such a way that the female is always heterozygous in respect to sex and also barring when present. The male, on the other hand, is always homozygous in respect to sex and may be either homozygous or heterozygous in respect to barring. I have recently performed the following experiments, which bear directly on this point and confirm his theoretical deductions.

Experiment 1.—A Buff Rock male (non-barred) bred to Barred Rock females give, in F_1 , barred males and non-barred (blacks or buff) females.

Experiment 2.—A Barred Rock male bred to Buff Rock females (non-barred) or a Rhode Island Red female (non-barred) gives in F_1 , all barred birds in both sexes.

Experiment 3.—A Buff Rock male bred to F_1 females (non-barred) from experiment 1 gives, in F_2 , chicks which do not show the down pattern characteristic of chicks from barred parents, thus indicating an entire absence of barring in F_2 .

These experiments may be formulated thus: Using B =barring factor, b =its absence; F =the female sex factor, f =its absence or the male sex factor. Assume that B and F can not occur in the same gamete (Spillman). Then,

Experiment 1 becomes $bf \cdot bf \times Bf \cdot bF = Bf \cdot bf + bf \cdot bF$.

Experiment 2 becomes $Bf \cdot Bf \times bf \cdot bF = Bf \cdot bf + Bf \cdot bF$.

Experiment 3 becomes $bf \cdot bf \times bf \cdot bF = bf \cdot bf + bf \cdot bF$.

Other crosses giving similar results are:

Experiment 4.—A White Rock male (carrying barring as a cryptomere) mated with Brown Leghorn females gives in F_1 both sexes barred.

Experiment 5.—The reciprocal cross, viz., a Brown Leghorn male mated with White Rock females gives black chicks and chicks having a down pattern like that of Barred Rock chicks. These chicks, however, are yet too young to enable a determination of their sex.

Experiment 6.—A White Rock male (carrying barring) bred to Buff Rock females gives, in F_1 , both sexes barred.

Experiment 7.—From the reciprocal cross I have only two birds as yet, both barred males.

Experiment 8.—One of the F_1 barred males from experiment 7 mated with a Buff Rock female gives, in F_2 , barred and non-barred chicks, which are still too young to permit of their sex being determined.

While my results appear to confirm Spillman's suggestion, I wish to point out that experiment 3, rather than experiment 2, 4, 6 or 8, furnishes us the true test of his suggestion, for the reason that the presence of the F factor may simply prevent the B factor from becoming visible under certain conditions. In some experiments, at any rate, I find that the presence of the F factor operates to modify barring, making it appear obscure and blurred as compared with males from the same parents. On the other hand, we may refer this obscuring of barring to some other cause, perhaps the heterozygous nature of the female.

The details of these experiments are reserved for a later paper.

H. D. GOODALE

Since the above note went to SCIENCE some F_2 chicks in experiment 3, have reached the

¹ *Am. Nat.*, Vol. XLII., No. 50, 1908.

stage at which barred chicks usually exhibit distinct barring in their first feathers. Such barring is absent in these F_2 chicks.

**THE TENTH ANNUAL MEETING OF THE
SOCIETY OF AMERICAN BACTERIOLOGISTS
HELD AT BALTIMORE, MD.,
DECEMBER 29-31, 1908**

THE tenth annual meeting of the Society of American Bacteriologists was held in the rooms of the laboratories of pathology and of physiology of the Johns Hopkins University and Hospital, Baltimore, Md., on December 29, 30 and 31, 1908.

Professor H. L. Russell, of the University of Wisconsin, president of the society, occupied the chair.

The scientific program consisted of thirty-two papers, all of which aroused much interest; certain of them are reproduced in abstract below. The society also met in joint session with Section K of the American Association for the Advancement of Science on December 30, when a paper on "Anaphylaxis" was read by one of its members, Dr. M. J. Rosenau, of Washington, D. C.

About fifty-two persons were in daily attendance at the several sessions of the society.

During the sessions the following matters of business were transacted: Dr. William H. Welch, of Baltimore, was reelected to represent the society on the council of the American Association for the Advancement of Science. To fill the vacancy on the Committee on Methods and Identification of Species, caused by the absence of Professor F. D. Chester, Professor C.-E. A. Winslow, of Boston, was duly elected. Professor Erwin F. Smith, of Washington, D. C., was delegated to represent the society at the approaching meetings of the International Botanical Congress at Brussels in 1910. The question of the society withdrawing its affiliation with the American Association for the Advancement of Science and transferring the same to the American Society of Naturalists and agreeing to meet with the latter body in the future was warmly discussed. It was decided to sever the present relations and join meetings with the naturalists should they decide to meet apart from the American Association for the Advancement of Science.

The following are the names of the officers of the society elected for the year 1909:

President—Dr. J. J. Kinyoun, Washington, D. C.

Vice-president—Dr. Veranus A. Moore, Ithaca, N. Y.

Secretary and Treasurer—Dr. N. MacL. Harris, Chicago, Ill.

Council—Dr. W. W. Ford, Baltimore, Md.; Dr. F. C. Harrison, Macdonald College, Quebec; Dr. H. W. Hill, Minneapolis, Minn.; Mr. Lore A. Rogers, Washington, D. C.

By the election of the following gentlemen, the limit to active membership in the society, as defined by the constitution, has now been reached, namely, 125:

Dr. Burdett L. Arms, assistant director of the bacteriological laboratory of the Board of Health, Boston, Mass.

Dr. John W. Connaway, professor of comparative medicine, and veterinarian in the College of Agriculture, the University of Missouri, Columbia, Mo.

Mr. George E. Gage, assistant in bacteriology, Yale University, New Haven, Conn.

Mr. Daniel D. Jackson, director of the laboratories, Department of Water Supply, Gas and Electricity, New York City.

Dr. Harry T. Marshall, professor of pathology and bacteriology, University of Virginia, Charlottesville, Va.

Dr. Otto Rahn, assistant professor of bacteriology and hygiene, Michigan Agricultural College, East Lansing, Mich.

Mr. James C. Temple, soil bacteriologist, Georgia Agricultural Experiment Station, Experiment, Ga.

ABSTRACTS OF CERTAIN PAPERS

Acid Fermentations of Milk: E. G. HASTINGS and B. W. HAMMER, University of Wisconsin, Madison, Wis.

In milk, butter and cheese are constantly found organisms identical in all important points with those supposed to be characteristic of certain fermented milks, especially the Bulgarian yoghurt. Production of 3-4 per cent. of acid in milk, growth at high temperature characterize the organism. The therapeutic value which has been ascribed by Metchnikoff and others to the fermented milks, such as yoghurt, is probably due to the composition of the milk, rather than to the presence of the peculiar organism. Since opportunity is constantly offered for the alimentary tract to become seeded with the organism, if it finds favorable conditions for growth in the alimentary tract, it should establish itself, no matter how slight the seeding may be, and we should find it in the feces constantly. Massive seedings can only temporarily establish the organism unless the environment is favorable.